

### Abstract of the Disclosure

An MESFET is configured wherein a semiconductor layer structure including an i-AlGaAs buffer layer, an n-AlGaAs electron supply layer having an impurity doping density ranging from  $1 \times 10^{17} \text{cm}^{-3}$  to  $1 \times 10^{18} \text{cm}^{-3}$  and a layer thickness ranging from 1nm to 10nm, and an n-GaAs channel layer, all of which are sequentially deposited from the semi-insulating GaAs substrate side, is disposed on the semi-insulating GaAs substrate, a gate electrode is provided on the n-GaAs channel layer, and a source electrode and a drain electrode opposite to each other with the gate electrode interposed therebetween are provided.